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**Testimony
Before the Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
United States House of Representatives**

**Hearing on:
Climate Change: Perspectives of Utility CEOs
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SUMMARY

ODEC is a wholesale electric supplier to 12 distribution cooperatives which own ODEC. We generate electricity from a diversified fuel mix, including coal, nuclear, gas, oil, and renewable sources. The distribution co-ops we serve have developed demand management programs that can shave 10 percent off our annual peak. Even with that demand management, our growth will require additional base load generation soon. Under all realistic analyses, coal will continue to be needed to meet base load electricity needs, indicating the need to develop new technologies in the face of climate change concerns.

There are three critical points for this Subcommittee to consider when developing climate change legislation:

First, developing and commercializing new technologies (including advanced generation technologies and carbon capture and storage technologies) will be critical for the utility sector to reduce greenhouse gas emissions. We urge the Subcommittee to only consider legislation that ties any reduction requirements and associated timelines to the commercial availability of cost-effective technology to achieve any reductions. Additionally, adequate funding must be provided for the research, development, demonstration, and commercialization of these new technologies.

Second, Congress must provide incentives to deploy those new, riskier technologies, and we urge the Subcommittee to include appropriate incentives for not-for-profit cooperative utilities to help protect cooperative member-consumers from the higher cost and risk from new technologies. Cooperatives are least capable of financing newer, riskier technologies, and appropriate incentives will allow us to play a more substantial role under any climate change program. Additionally, appropriate incentives will help protect rural electric

member-consumers from the higher costs of these new technologies, since our member-consumers are among those least able to afford higher energy prices.

Third, if the Subcommittee develops cap-and-trade legislation, there are several design elements that we would want to work with you to develop. One of the most critical is how to allocate emissions allowances. We believe that allowances must be allocated, not auctioned, and they must be allocated to fossil-fuel based units. Non-emitting units should not be allocated emissions allowances. I say this as an owner of both fossil-fuel based generation units and non-emitting nuclear power. Providing allowances to only emitting units helps to minimize electric generation costs and reduce the higher prices placed on the nation's electric consumers. Providing allowances to non-emitting sources would only drive up the cost of electricity for consumers without providing any additional environmental benefit.

Electric cooperatives nationwide provide power to some of the most rural, and some of the poorest, areas of the country. Cooperative service territory averages 7 consumers per mile of distribution lines, compared to 35 for investor-owned utilities and 46 for municipal utilities. Nearly 400 distribution electric cooperatives serve areas with poverty rates above the national average and over 2/3 of electric cooperatives have residential rates higher than the neighboring investor-owned utility. In addition, the average household income and per capita income of cooperative member-consumers is below the national average by 16.2 percent and 15.3 percent respectively.

On average, generation cooperatives (G&Ts) have equity ratios of approximately 18 percent, with many G&T equity ratios in the 5 to 10 percent range meaning that few, if any, G&Ts have the financial ability to invest in newer, riskier, more unproven technologies. Currently coal accounts for 80 percent of the electricity generated by co-ops. We have invested in coal to provide our member-consumers with the most reliable and affordable electric energy possible.

INTRODUCTION

Good Morning Mr. Chairman and members of the Subcommittee. My name is Jack Reasor, and I am President and Chief Executive Officer of Old Dominion Electric Cooperative in Glen Allen, Virginia. It is a pleasure to appear before you today to present some of our views on the issue of climate change. I deeply appreciate the invitation being extended to me as a representative of the electric cooperative sector of the utility industry.

At the outset, I need to emphasize three critical points that I will discuss further from the cooperative segment of the utility sector for this Subcommittee to consider as you develop climate change legislation.

First, developing and commercializing new technologies (including advanced generation technologies and carbon capture and storage technologies) will be critical for the utility sector to reduce greenhouse gas emissions. We urge the Subcommittee to only consider legislation that ties any reduction requirements and associated timeline to the commercial availability of cost-effective technology to achieve any reductions. Additionally, adequate funding must be provided for the research, development, demonstration, and commercialization of these new technologies.

Second, Congress must provide incentives to deploy those new, riskier technologies, and we urge the Subcommittee to include appropriate incentives for not-for-profit cooperative utilities to help protect cooperative member-consumers from the higher cost and risk from new technologies. Cooperatives are least capable of financing newer, riskier technologies, and appropriate incentives will allow us to play a more substantial role under any climate change program. Additionally, appropriate incentives will help protect rural electric member-consumers from the higher costs of

these new technologies, and our member-consumers are among those least able to afford higher energy prices.

Third, if the Subcommittee develops cap-and-trade legislation, there are several critical design elements to that policy that we would want to work with you to develop. One of the most critical is how to allocate emissions allowances. We believe that allowances must be allocated, not auctioned, to utilities, and they must be allocated to fossil-fuel based units. Non-emitting units should not be allocated emissions allowances. I say this as an owner of both fossil-fuel based generation units and non-emitting nuclear power. Providing allowances to only emitting units helps to minimize electric generation costs and reduce to higher prices placed on the nation's electric consumers. Providing allowances to non-emitting sources would only drive up the cost of electricity for consumers without providing any additional environmental benefit.

OVERVIEW OF OLD DOMINION ELECTRIC COOPERATIVE

Old Dominion Electric Cooperative (ODEC) generates electricity at wholesale and supplies electricity to twelve distribution cooperatives located in Virginia, Maryland, and Delaware. ODEC is owned by these distribution cooperatives (co-ops), which provide electricity to over half a million customers and cover one-third of the land mass of Virginia and 80 percent of the Delmarva Peninsula.

While ODEC supplies wholesale electricity to communities in Virginia experiencing large residential and commercial growth, ODEC continues to meet the challenge of supplying affordable, reliable electricity for resale to rural areas where population densities are low. Low population density and the fact that the ultimate consumers are our owners are two primary drivers requiring ODEC to focus on supplying wholesale electricity at affordable prices.

To satisfy existing and anticipated wholesale electricity needs, ODEC has diversified its fuel sources and uses coal, nuclear, natural gas, and oil to generate electricity. In 2005, ODEC generated over 5.5 million megawatt hours (MWh) of electricity. Additionally, ODEC purchased over 7 million MWh of electricity on the market to meet the needs of our distribution cooperatives.

ODEC also purchases 12,500 MWh of renewable energy from a landfill gas-to-energy project. We are investigating additional opportunities to develop renewable generation, but Virginia's wind, geothermal, solar, and biomass resources are limited (see attachment – Renewable availability in the US). ODEC is currently working with the Virginia Waste Solutions Forum and hopes to develop a manure digester and/or poultry litter energy project in the Shenandoah Valley. Although important to Virginia and our consumer-members, these tend to be small scale projects, and the opportunities for renewable energy development in Virginia, like much of the Southeast, are limited.

Over the past 20 years, the ODEC members have implemented a load control program achieving approximately 10 percent control of ODEC's annual peak. These programs are ongoing and will continue to reduce ODEC's future peak requirements.

OVERVIEW OF ELECTRIC COOPERATIVES GENERALLY

Electric cooperatives are very concerned that some proposals would have dramatic negative economic consequences, and we have in the past opposed poorly designed initiatives because of those economic consequences. Electric cooperatives believe strongly that any program should minimize adverse economic consequences on individuals, economic sectors, and regions of the country that may least be able to afford higher energy prices resulting from a climate change policy.

Electric cooperatives face several important economic realities that must be considered during development of any national program. For example, co-ops serve many of the poorest parts of the nation. Nearly 400 distribution electric cooperatives serve areas with poverty rates above the national average. Average household income and per capita income of cooperative member-consumers is also below the national average, by 16.2 percent and 15.3 percent respectively. Cooperatives also serve a disproportionate share, nearly twice the level of the rest of the industry, of mobile homes. Over 13 percent of cooperative consumers reside in mobile homes compared to the overall utility average of 7.3 percent.

Additionally, electric cooperative rates have been, and remain, higher than the rates of the neighboring investor-owned utility. The most recent data shows that over 2/3 of electric cooperatives have residential rates higher than the neighboring investor-owned utility, and about 3/4 of cooperatives have commercial or industrial rates higher than the neighboring investor-owned utility. [See Attached Chart – Residential Rates Compared with nearest IOUs.]

Cooperative service territory is often quite rural, and cooperatives nationwide average 7 consumers per mile of distribution lines, compared to 35 consumers per mile for investor-owned utilities and 46 consumers per mile for municipal utilities. As such, the distribution investment per customer is higher to serve those areas, while the revenue per mile of line is dramatically lower than IOU and municipal utilities. Co-ops generate about \$10,500 per mile of line, while IOUs generate about \$62,600 per mile of line and municipal utilities generate about \$86,300 per mile of line.

Rural electric cooperatives also serve a much higher share of residential customers, and a lower share of commercial and industrial facilities compared to the rest of the industry, meaning that any increased costs for us get passed through to individuals, rather than business customers. Of total cooperative

sales, 58 percent is to residential customers, compared with 37 percent for the industry as a whole. Inversely, industrial customers make up 21 percent of all co-op sales, and commercial customers are also 21 percent of our sales. For the entire industry, 35 percent of sales are to commercial customers and 27 percent to industrial facilities.

Rural electric generating cooperatives, referred to as G&Ts are also in economic situations that make it very hard for them to invest in cutting-edge technologies. Those technologies are often riskier for lenders to begin with, and G&T equity ratios make it harder still to secure financing for anything other than proven, commercially-available technologies. On average, G&T cooperatives have equity ratios of approximately 18 percent, with many G&T equity ratios in the 5 to 10 percent range. Few, if any, G&Ts have the financial ability to invest in newer, riskier, more unproven technologies when compared to other segments of the industry.

Because coal-based generation has historically been the lowest-cost form of generation available, co-ops have invested in this generation source to provide our member consumers with reliable, affordable power. Currently coal accounts for about 80 percent of the electricity generated by co-ops nationwide, compared to about 52 percent for the electric utility industry as a whole. These investments have been made to provide our member-consumers with the most reliable and affordable electric energy possible.

All of this data indicates that a mandatory greenhouse gas reduction program will have a disproportionate impact on rural electric cooperatives and our member-consumers.

GENERAL PRINCIPLES FOR CLIMATE CHANGE LEGISLATION

As a generator of electricity, ODEC is very aware of the growing debate over how to address climate change concerns in Congress. We will be impacted significantly by various climate change proposals given our generation mix and the generation mix of the companies from which we purchase power. ODEC will be required, as a cost-based not-for-profit utility, to pass any cost increases on to our distribution cooperatives, which in turn must pass those costs through to end-use consumers. As consumer-owned and run utilities, we are deeply concerned about the potential for serious economic impacts from poorly-designed policies to address climate change.

I would like to lay out several broad principles against which any climate change policy must be evaluated. NRECA's membership will decide tomorrow, Wednesday, on principles that will guide our national association's policy as this debate moves forward, and all cooperatives look forward to working with you to craft a responsible climate change policy.

We believe any plan must cover all sectors of the economy, not simply electric generation. No single sector is responsible for the accumulation of greenhouse gases in the atmosphere, and no single sector should be solely responsible for achieving the public policy objective of eventually stabilizing the greenhouse gas concentration in the atmosphere. Additionally, a program that covers a wider scope of economic activities generally will be more economically efficient than a program targeted at only limited economic activity.

Legislation must recognize that the climate change issue is a global issue, and include provisions to encourage all major emitting nations to address their emissions. I understand that Congress cannot pass a law requiring any action from a sovereign nation, but I would urge the Subcommittee to include elements in your legislation that would put the brakes on a U.S. program if other major emitting nations are not taking suitable actions to address their emissions. We should not unilaterally disadvantage American companies and American workers

in the face of international competition if our competitors are not taking some level of responsible actions to address climate change as well.

Climate change proposals must also recognize the importance of maintaining fuel diversity, allowing a variety of fuel sources to meet the energy and economic needs of the nation. There must be a future for abundant, domestic coal under any plan, for additional nuclear generation, and for expanded use of renewable resources like wind, solar, hydro, geothermal, biomass, agricultural by-products and animal organic manure and litter and others where they are available.

Any proposal should minimize the negative economic effects of higher energy prices, and include provisions such as an economic safety valve to protect against significant economic consequences. Congress should consider the impacts on different regions and different sectors and address any disparities that may develop.

In the short term, terrestrial sequestration, conservation, and energy efficiency measures appear to offer the most cost-effective methods of mitigating greenhouse gas emissions, and those efforts should take priority and be recognized.

In the longer-term, technological advances will be critical to allowing the electric utility sector to actually reduce greenhouse gas emissions. We need to continue the important progress we have made on advanced coal generation technologies, improved efficiencies at fossil and nuclear generation facilities, new nuclear generation technologies, improving renewable energy technologies, and commercializing cost-effective carbon capture technologies.

Any plan should provide incentives to all segments of the utility industry to develop and deploy advanced electric generation, carbon-capture, transmission, and distribution technologies that improve the greenhouse gas efficiency of the

power sector. Historically tax incentives have only benefited the for-profit segment of the electric utility industry, and if cooperatives are going to be expected to be part of any greenhouse gas reduction plan, equitable incentives must be provided to co-ops as well.

Any plan should recognize that climate change policy and energy policy are inextricably linked, and that climate change policies can have a significant impact on our nation's economic and energy security. Federal policy should also preempt local, state, and regional mandatory programs to prevent a patchwork of regulatory approaches across the nation. Finally, any plan should remove regulatory and other impediments to increasing the efficiency of existing generating units and improving the carbon efficiency of our current resources.

EMPHASIS MUST BE PLACED ON NEW TECHNOLOGIES

As I have indicated, there must be a strong emphasis on developing and widely deploying new technologies. But these technologies must be developed in a considered manner to assure they produce the results we will most certainly pay for. We need proven technologies and an implementation plan to assure technical feasibility and cost-effective control. We should not mandate use of any particular technology to achieve these policy objectives. Based on my experience and the experiences of my fellow Generation and Transmission (G&T) CEOs, it is unlikely that such technologies will be widely commercially available for 10 to 20 years.

As I stated earlier, ODEC currently purchases over half of its energy needs in the marketplace. Our members continue to grow, and in the near future we will need more base load generation. The realistic options we have are our existing energy sources—coal, nuclear, and natural gas.

Given high natural gas prices and concerns over availability, nuclear and coal are more attractive options for base load generation. Nuclear has the advantage of being carbon-free, but nuclear waste disposal has yet to be settled and public acceptance remains an issue in some areas. That leaves coal. It is abundant, available locally, and affordable. But its carbon emissions are twice that of natural gas with conventional generation.

For those of us evaluating whether to build coal generation within the next 10 years, the issue of carbon emissions and a change in federal policy is of overriding concern. Technology is available to build plants that are more efficient than in the past. Supercritical and ultra-supercritical generation increase efficiency and reduce emission intensity 5 percent over conventional pulverized coal. On the other hand, IGCC, although promising, has yet to be demonstrated at commercial scale – 500 to 1000 MW capacities – for electric generation. Several plants are planned and will provide us with good information on reliability and environmental and economic performance. I would note that the efficiency of IGCC plants is currently comparable to advanced coal combustion and IGCC currently carries about a 20 percent cost premium compared to advanced coal.

Beyond the 5 to 10 percent gains in generation efficiency possible between now and 2015, additional reductions in carbon emissions may come from carbon capture and storage (CCS). The Subcommittee recently heard testimony from the Electric Power Research Institute on the state of CCS technology. This is also the subject of the MIT Future of Coal study released last week and of many other reports. Their conclusions are all basically the same: While CCS may be the future of coal in a carbon-constrained world; the technology is still in development.

Best case modeling scenarios suggest that CCS will add 40-50 percent to the cost of electricity for IGCC plants and an additional 30 percent above that for PC plants (for a total cost of electricity 60-80 percent higher than today) due to

energy losses to post-combustion CO₂ separation and capital expenditures for the separation and capture equipment. Translated into dollars, costs are estimated at \$27/ton of CO₂ (\$100/ton C) or 2.3 cents/kWh--a 50 percent increase in the wholesale cost of electricity. These costs exclude post-CO₂ storage costs such as monitoring and liability insurance, and the CO₂ will need to be transported via pipeline from the plant site to the areas that have suitable geologic storage formations. More importantly, integrated CCS technology has yet to be demonstrated on a commercial scale anywhere and federal and state governments have yet to propose a regulatory framework for CCS.

The CURC-EPRI Roadmap projects that with an aggressive RD&D program and experience installing and operating integrated systems, the costs of electric generation with CCS will come down by 2025. However, there is considerable uncertainty over cost estimates 5 years into the future, let alone 20 years. And the roadmap goals are stretch goals. They are only achievable with federal commitment, federal funding, and federal RD&D.

There is much work to be done before we'll be able to capture and store the CO₂ emissions from one 500 MW coal plant (3 million tons of CO₂/year). The United States currently has 300,000 MW of coal-based generation. We have much work ahead of us just on the technology side, and also have significant policy matters to address such as potential liability concerns for CO₂ sequestration, transportation infrastructure for the CO₂, and responsibilities for monitoring long-term storage, among others.

For a small generation cooperative, the technology choices are limited. We are too small to risk our members' money on unproven technology. We can't afford a 50-80 percent cost premium. And we can't wait until 2025 to build generation.

We will need federal assistance to address this challenge and federal policy that recognizes our need to meet a growing electricity demand and the inadequacy of current technologies to mitigate CO2 emissions on a large scale.

EQUITABLE INCENTIVES MUST BE PROVIDED

I have outlined the significant need for a technology push that will provide utilities with the tools needed to reduce carbon emissions. In addition to that significant technology push that must occur, appropriate incentives will play a very important role in making this technology available and affordable for our member-consumers. Incentives enable utilities to bring alternative generation resources on line despite their higher capital costs. Small in size with few consumers per mile, electric cooperatives can't hide high prices for generation. We operate on a not-for-profit basis, returning revenues in excess of what is needed for generation back to our member-consumers. By the same token, electric cooperatives must flow the costs of any generation to consumers through rates, and every member on our system bears those costs. Keeping rates affordable and the delivery of energy reliable is our key mission, and our locally-elected boards of directors hold us accountable to that mission.

The Energy Policy Act of 2005 recognized that incentives, particularly tax incentives, take center stage among federal policies that foster technology development. For example, EPACT extended the Production Tax Credit (PTC) that provides up to a 1.9 cent per kWh incentive for development of wind, geothermal, hydropower, biomass and other renewable resources. EPACT created an equally important new program, the Clean Renewable Energy Bond, in recognition that not-for-profit electric cooperatives, generally exempt from tax at the federal level, can not take advantage of tax credits like the PTC. The CREB program has proven to be as successful as the PTC in getting new renewable resources in the ground, as electric cooperatives alone flooded Treasury with more than \$550 million in applications for 85 projects in 22 states.

EPACT also provided an investment tax credit for the development of advanced pulverized and IGCC coal technologies and a Production Tax Credit for advanced nuclear resources. Unfortunately, federally tax-exempt electric cooperative do not have an opportunity to put those incentives to use. At the same time, because their significant generating capacity is sized to keep pace with our growing communities, applying advanced coal technologies and nuclear generation resources stands to make the biggest impact on reducing carbon emissions. Today, electric cooperatives do not have the opportunity that other sectors do to invest in these technologies. Although this issue will also be considered by other committees, we would like your help to ensure that any future energy bill will include financing mechanisms that electric cooperatives can use for advanced clean coal and nuclear generation, and the PTC and CREBs programs are extended for a meaningful length of time.

ALLOWANCES MUST BE FAIRLY ALLOCATED, NOT AUCTIONED

The first environmental cap and trade program in the world began in the U.S. with 1990 Clean Air Act Acid Rain Control Program – as subject very familiar to this Subcommittee. Since then numerous other air regulatory programs have incorporated cap and trade approaches to effectively address emissions mitigations. Although these cap and trade programs are costly, in all cases they have proven to be the most cost-effective methods available to meet the environmental goals.

To date U.S. cap and trade programs have incorporated similar approaches in design. For the electric utility sector all programs distribute emissions “allowances” to “emission units” of regulated entities, with each allowance representing a portion of the total emissions cap. Usually one allowance represents one ton of emission to be controlled. In some cases small amounts of the total available allowances within the respective program are auctioned, and

recently cap and trade programs have made provisions to distribute allowances to emission units constructed after the programs have taken effect (through so-called “new unit set-asides”).

Should the Congress enact a cap and trade system it should be set up in the most cost-effective manner possible to minimize costs to the nation’s electric cooperative consumers. To ensure that a cap and trade program addressing electric utility greenhouse emissions (principally CO₂) is fair and can most effectively function to minimized costs while meeting program mitigation goals, a greenhouse gas cap and trade regime must incorporate several fundamental concepts.

First, any program must allocate the vast majority, if not all, of the electric utility sector’s greenhouse gas allowances to greenhouse gas emitting units. It should be noted that, as existing electric utility cap and trade regimes have demonstrated, allocating emission allowances to emitting units does not effect the overall program compliance, or in other words the ability to meet whatever emissions cap is imposed. Further, allocating allowances to utility emitting units, as opposed to allocations upstream at the fuel source or downstream to electricity purchasers, maximizes the ability of the utility emitters to make the most cost-effective decisions to provide the most affordable electric generation, while meeting the emissions cap.

Specifically, allocating allowances to emitting units reduces compliance costs for cooperative consumers who purchase electricity from cost-based cooperative electric generators and distributors. This is necessarily so simply because under any cap and trade program, the emissions placed under the cap are valued with the dollar amount determined by the stringency of the cap. Owners and operators of emitting units under a cap have several options available with allowances allocated to their units. These options are not mutually exclusive and

all result in cost savings to consumers who purchase electricity from not-for-profit cooperatives that is priced according to cost to generate and distribute it.

Cooperative generators can use allowances to cover all or a portion of a unit's emissions, thus reducing the cost of electricity compared to the alternative of requiring generators to buy all needed allowances at market-based or auction prices. In other words, auctions will drive up electricity prices unnecessarily to rural electric cooperative member-consumers. Alternatively, where it is more cost-effective to do so, generators with allowances could sell those allowances to generate proceeds to help cover more expensive electricity purchased from low- or non-emitting units in lieu of using allowances to cover their emissions. This flexibility can be crucial to fossil-fuel based electricity generators, and ultimately our member-consumers.

The second fundamental concept that any cap and trade program must incorporate is an equitable allowance distribution among electric utility emitting units. Generally speaking, the higher the unit's historical greenhouse gas (CO₂) emissions the more costly the utility's options will be to meet cap compliance obligations and to supply substitute generation. Therefore, following some more recent regulatory cap and trade programs, the most equitable method would be to allocate allowances based on each unit's recent historical CO₂ emissions as a percentage of all utility emissions over the same time period. All fossil fuel utility units should receive allocations based on this general concept.

Also, some of the more recent clean air cap and trade programs have set aside emission allowances for new units constructed after the cap takes effect. I believe such an approach for a greenhouse gas cap and trade program is fair and equitable because as a practical matter, there is no commercialized fossil-fuel based-load generation where carbon capture and storage is available let alone reasonably priced. This is certainly a technology area that holds great promise, but presently such technology simply is not ready for prime time, and

until it is, significant new base load generation will be fossil fuel based and will emit CO₂.

To equitably address CO₂ emissions of new units constructed after the cap, I believe a new unit set-aside should be an integral part of any greenhouse gas cap and trade regime. This could be done in several ways, such as setting aside a small portion of allowances for new units out of the total allowances for all utility fossil fuel units. After a several year period of new unit's operation, each new unit could be allocated allowances under the basic formula for units existing before cap implementation and a new set-aside for future new units could be established.

CONCLUSION

Thank you Mr. Chairman for affording me the opportunity to testify as a not-for-profit, consumer-owned cooperative utility. I would be happy to answer any questions you or other members of the Subcommittee may have and look forward to working with you as you undertake the very daunting task of developing climate change legislation.